



Centre for Energy and  
Environmental Markets

UNSW  
THE UNIVERSITY OF NEW SOUTH WALES  
SYDNEY • AUSTRALIA



# Final Project Workshop on Distribution Network Tariff Assessment and Design

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***Asia Pacific Solar Research  
Conference – Side Event***

***Melbourne***

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# Our task

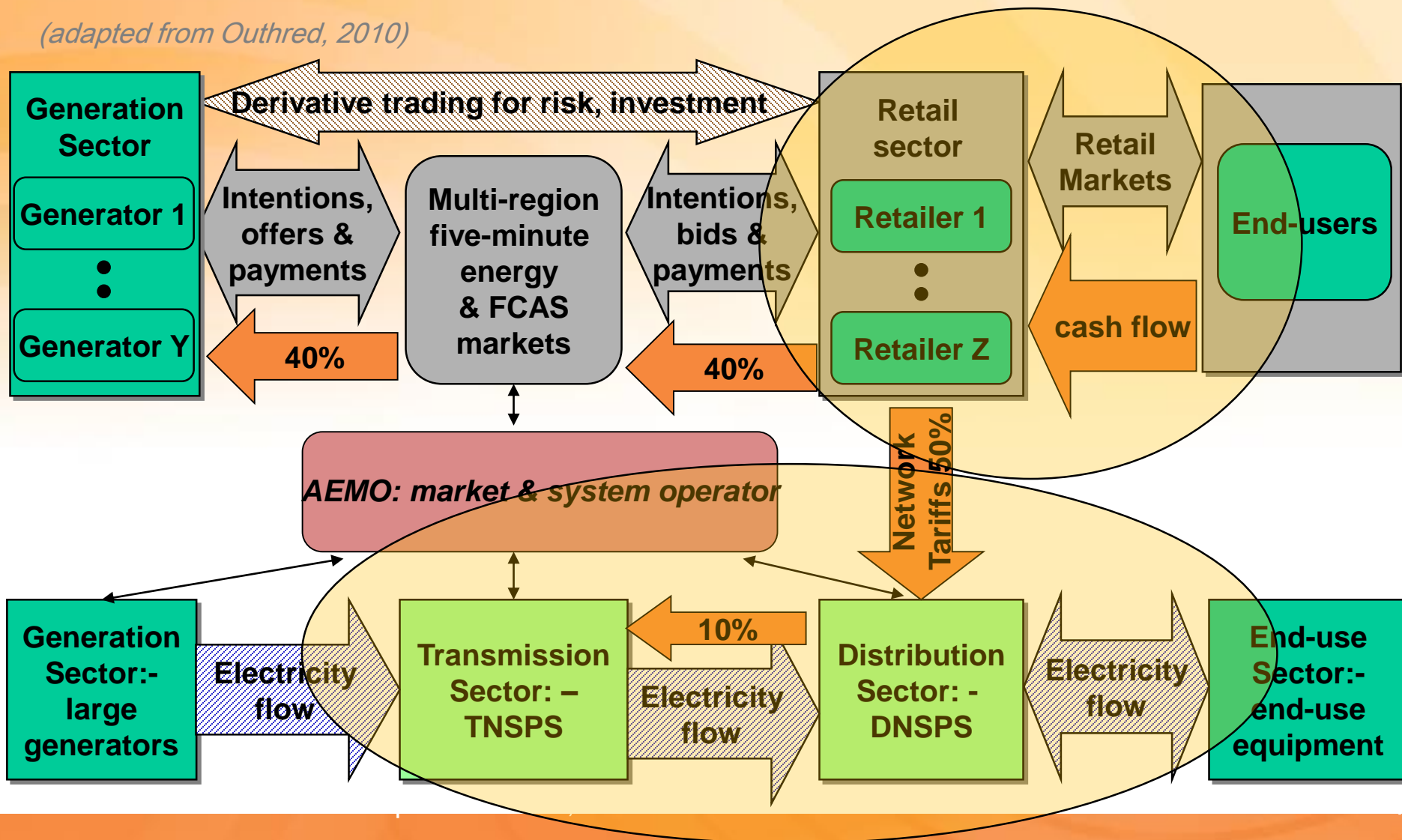
- Discuss opportunities yet challenges of introducing more cost-reflective dx network tariffs into Australian NEM
- Provide final update on the dx network tariff modelling tool and the project outcomes
- Hear from a range of invited speakers regarding the status of tariff reform, stakeholder engagement in the processes, and current issues for tariff design and analysis
- Identify potential future work to address key issues and themes arising in the discussion, *with the overall objective of improving consumer outcomes in the NEM*
- .

# Energy users and retail arrangements

- From clients
  - Early tailored industrial and commercial (lighting) applications with *service oriented contracting arrangements*
- ..to citizens
  - Electricity as an essential public good – rural electrification with *socially constructed tariffs*
- ..to consumers
  - The vertically integrated utility of growing size and scope with overall *cost-recovery, socially constructed, tariffs*
- ..to customers
  - Electricity industry ‘reform’, liberalisation, restructuring with *more mkt oriented energy ‘pricing’, more cost-reflective network tariffs*
- ..to perhaps now partners, competitors, or even ‘deserters’?
  - *More of the same or a genuine market opportunity?*

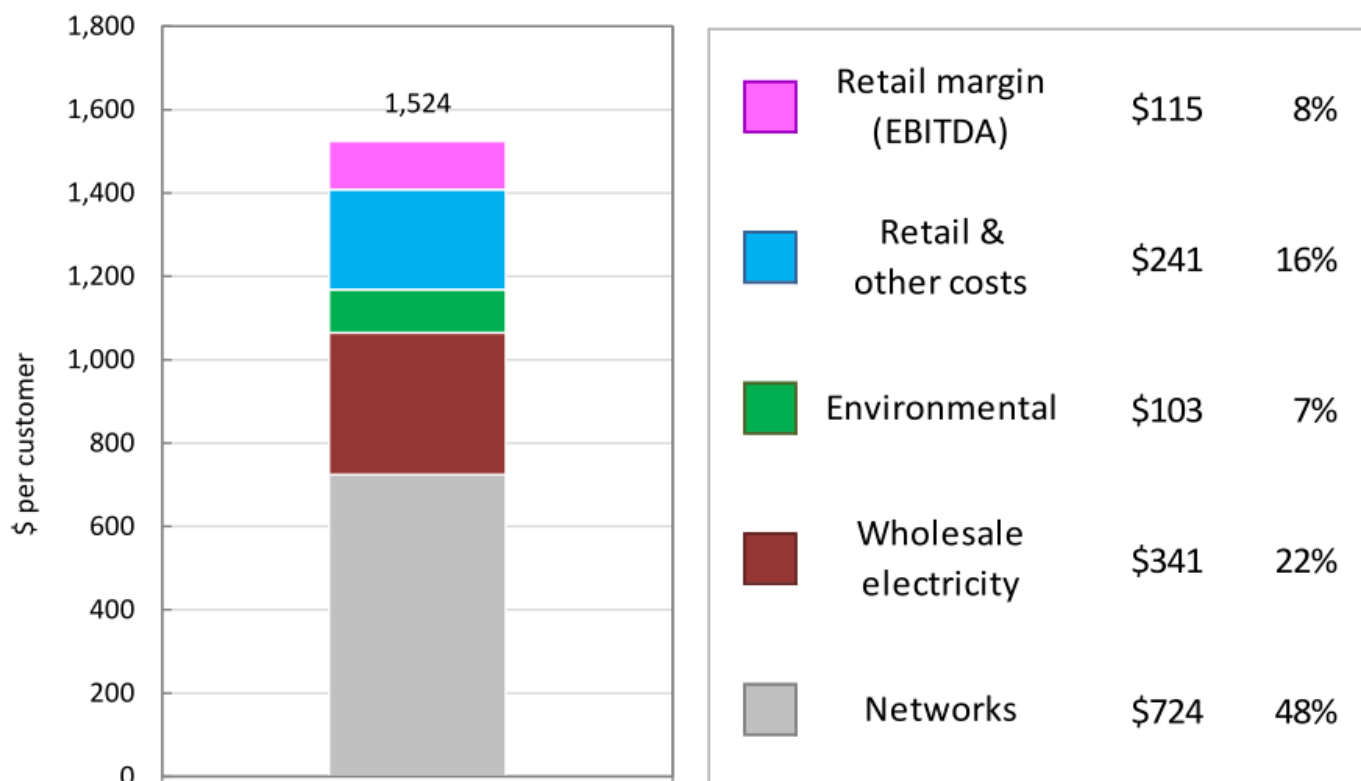
# Small end-users in the Australian NEM

(adapted from Outhred, 2010)



# Major proportion of house-hold costs go to 'non-competitive' n/w sector

**Figure 2.1: Components of an average residential customer bill across the NEM (excluding Tasmania) (2015/16, \$ per customer,) excluding GST**  
(ACCC, September 2017)



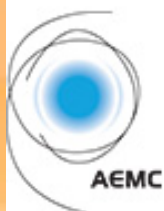
# Current NEM N/W tariffs for small energy users

- Largely remain a legacy of former technical capabilities and socialist ‘energy is an essential public good’ tendencies
- Send a primarily ‘volumetric’ consumption signal that incentivises lower consumption – *a good thing!?*
- Have ‘worked’ more or less so far, unless you
  - ...consider near doubling in network expenditure over less than a decade a ‘failure’ - noting that now falling*
  - .. are concerned about changing distributional impacts, equity*
  - .. Seek to facilitate appropriate distributed energy options and end-user engagement towards sustainable energy ends*

***Evident opportunities to improve this interface***



# A new direction for network tariffs



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## New rules for cost-reflective network prices

27 November 2014

The National Electricity Rules will be changed from 1 December 2014 to require regulated network companies to structure their prices to better reflect the consumption choices of individual consumers.

Under these changes, network prices will reflect the costs of providing the electricity to consumers with different patterns of consumption.

The new rules follow extensive consultation over the past year, and take into account submissions received when the draft rules were released in August.

AEMC Chairman John Pierce said the prices we pay for electricity would actively respond to the different ways people choose to use it under these new rules.

"These changes put consumers at the centre of future decision-making about energy," he said.

"By having prices that reflect the costs of different patterns of consumption, we are giving consumers clearer choices as we develop a more efficient, incentive-based network regulation framework.

# Will new cost-reflective tariffs efforts help?

- Which costs – past, present or future?
  - *Future costs and benefits are key for transformation, past costs the key incumbent consideration – hence treatment of residuals*
  - *And what of location specific costs?*
- For future costs, is Long Run Marginal Cost (LRMC) a truly meaningful and actionable concept for networks?
- What of transition?
  - Metering capabilities
  - Social expectations, hence political realities
- What of integration into broader end-user industry interface?
  - Does it matter if N/W tariffs aren't mirrored in retail tariffs?
    - Theory says no as 'someone is paying them'; but in practice?
  - Does it relieve DNSPS of obligations to engage with energy users?



# Tariffs as a social construct (CSIRO, Consumer's likely response to CRP, 2016)

- A 'basic' flat rate tariff (without any 'risk relief') is significantly more appealing to consumers than:
  - any form of *capacity* pricing, even with a money-back guarantee or automatic enabling technology; and
  - *real-time* pricing without any such 'risk relievers'.
- *Real-time* pricing must come with a compelling money-back guarantee in order to approach the appeal of a basic flat rate tariff, or have even a chance of being accepted.
- Even with the prospect of a risk-free trial, or an enabling device to help maximise the advantages of the new plan, there is limited consumer interest in shifting to novel, demand-based pricing structures like *capacity* pricing.
- A *flat rate* tariff offer with money-back guarantee achieves an unparalleled level of consumer acceptance, unmatched by any other combination of tariff and risk relief.
- Only a limited set of cost-reflective pricing offers seem to rival consumer acceptance of flat rate tariffs, specifically:
  - *peak time rebates* with the offer of a free automation device (aimed at easing management and maximising consumer benefit from the tariff); and
  - *time of use* tariffs, or *critical peak* pricing, when accompanied by the money-back guarantee (aimed at alleviating consumers' perceived risks in trialling the new offer).

- The NSW distributors' definition of 'marginal' costs does not capture all major types of marginal costs as it excludes replacement capital expenditure and related costs
- The NSW distributors' timeframe over which they forecast costs is too short to be considered 'long term' (this applies to Endeavour Energy and Essential Energy, in particular).

# A contested space

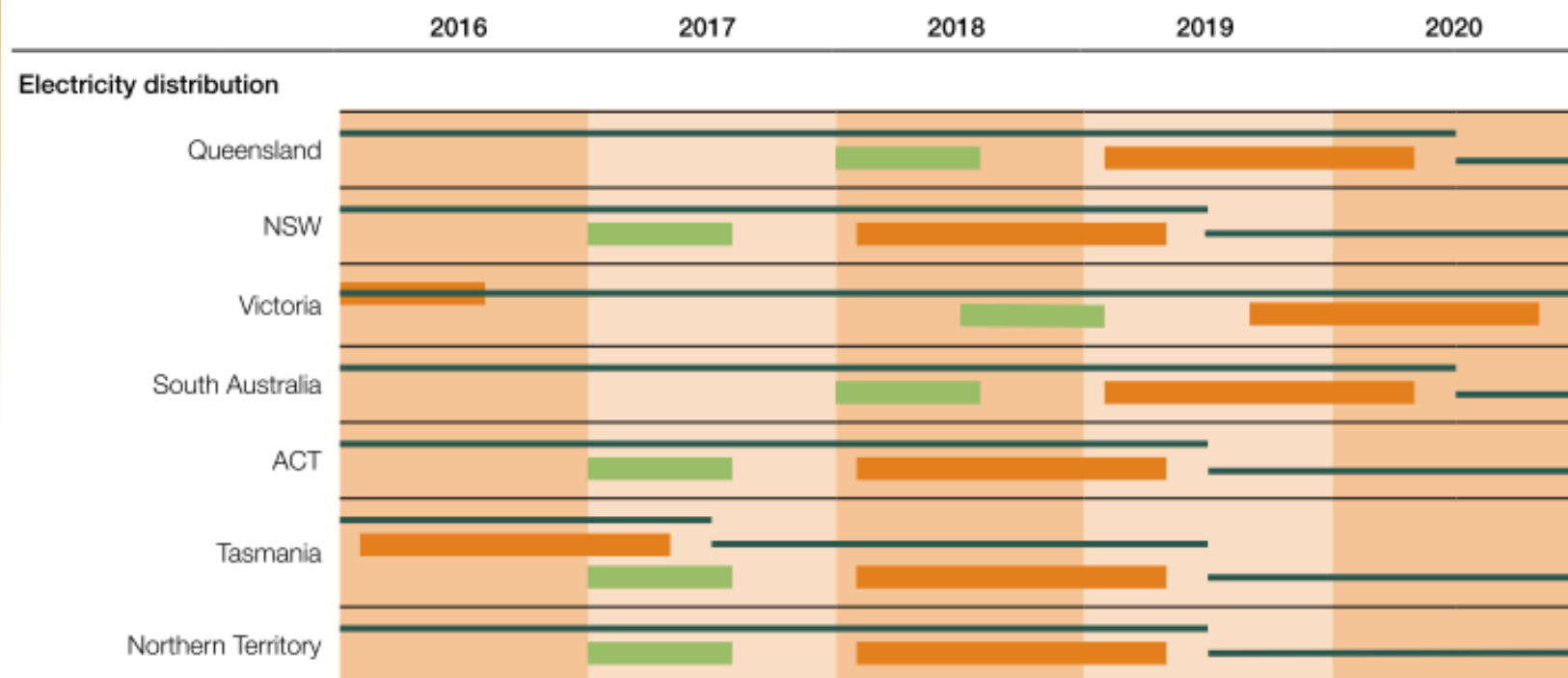
Our draft decision	Ausgrid revised proposal
We did not approve Ausgrid's proposed declining block tariffs for residential and small business customers.	In its revised proposal Ausgrid proposed to replace its existing residential and small business declining block tariffs with flat tariffs.
We did not approve Ausgrid's proposed assignment of new residential and small business customers which distinguished between those new customers with embedded generation and those new customers without embedded generation.	In its revised proposal Ausgrid accepted the AER draft decision. From 1 July 2018 all new residential and small business customers with or without embedded generation will be assigned by default to a time-of-use tariff. These customers will all have the option to opt-out to the transitional residential and small business tariffs.

We did not approve Ausgrid's proposed charging windows for peak, shoulder and off-peak for residential and small business customers on time-of-use tariffs.	For residential customers, Ausgrid proposed different peak hours on working weekdays for summer and winter months (2pm–8pm and 5pm–9pm, respectively). Ausgrid also removed the 2pm–8pm peak period on working weekdays for non-summer and non-winter months.
We required Ausgrid to either amend its charging windows or provide further justification regarding its proposed charging windows in general.	For small business customers, Ausgrid removed the 7am to 10pm shoulder period for weekends and public holidays.

(AER, NSW Distribution Tariffs, 2017)

# An ongoing tariff process

Timelines for AER determinations on electricity networks



(AER, *State of the Energy Market*, 2017)

- Regulatory control period/access determination period
- Framework and approach process
- Regulatory determination process

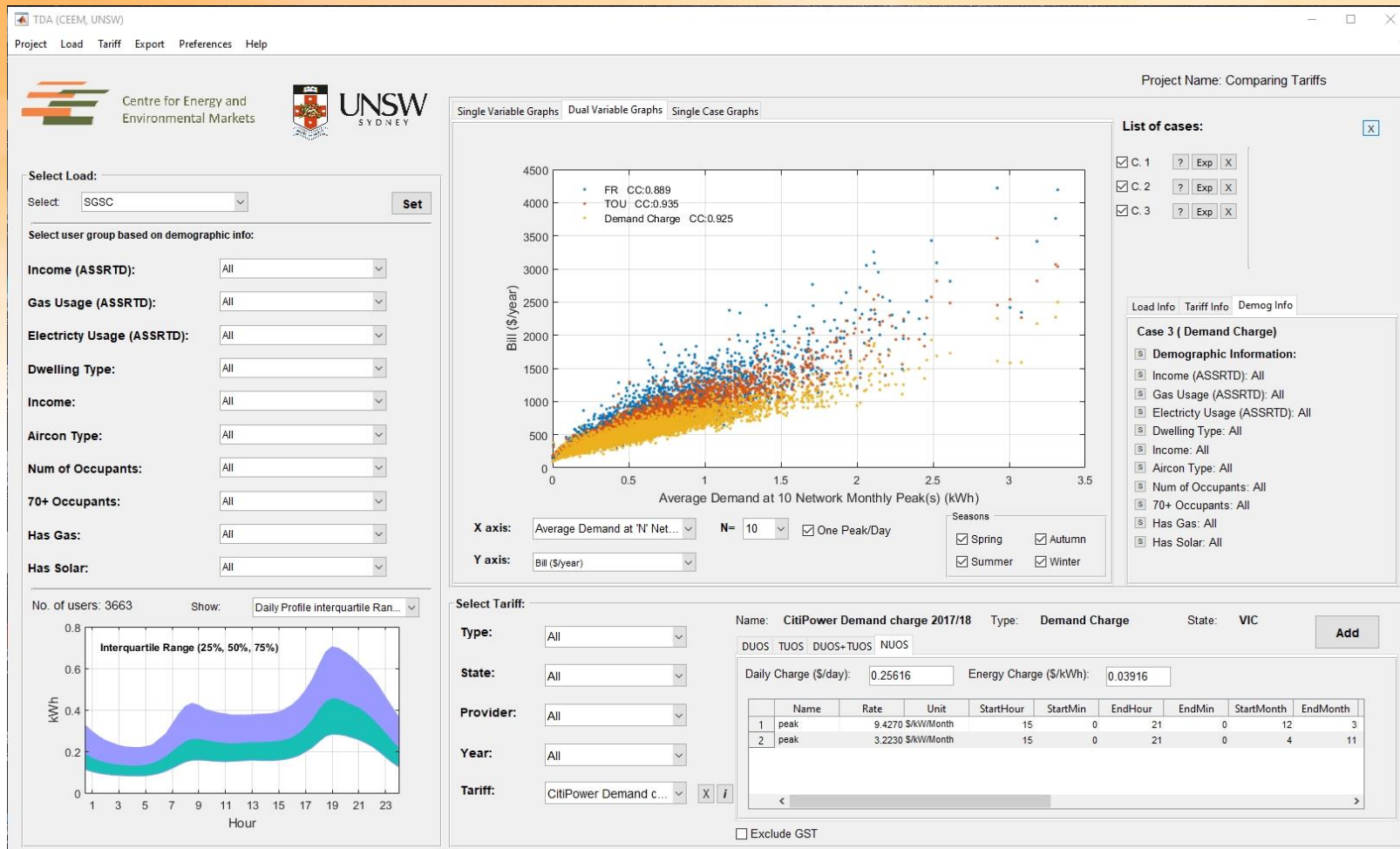
# AER, Consumer engagement guideline

(November 2013)

Guideline structured around four components setting out process for service providers to develop and implement new or improved consumer engagement activities to meet the best practice principles:

- Priorities—service providers to identify consumer cohorts, current views of those cohorts and their service provider; outline engagement objectives; and discuss the processes to best achieve those objectives.
- Delivery—service providers to address the identified priorities via robust and thorough consumer engagement.
- Results—service providers to articulate the outcomes of their consumer engagement processes and how they measure the success of those processes reporting back to us, their business and consumers
- Evaluation and review—service providers to periodically evaluate and review the effectiveness of their consumer engagement processes.”

# Tools to support n/w tariff engagement— *transparent, open-source, easy to use, robust, expandable*





# ECA / UNSW Project Outputs

- Tool, based on database of load profiles, customer attributes & tariff options, developed in collaboration with stakeholders, which makes detailed robust analysis of tariff impacts quick and simple, allowing evidence-based engagement, input to relevant regulatory processes, and better consumer advice. Tool will be made freely available so that stakeholders can download and run it on their own
- Workshops to facilitate (i) stakeholder input to the tool (ii) demonstration of tool to improve stakeholder capacity, build knowledge about tariff design.
- Ongoing IT and tool development support to assist interested stakeholders to add new consumer load data sets and tariff proposals.
- A number of academic publications presenting tool and its application to critical tariff analysis, providing academic review & validation of the work.

***Longer-term aim to facilitate better network tariff design and regulation, more efficient investment in both network and demand-side options.***



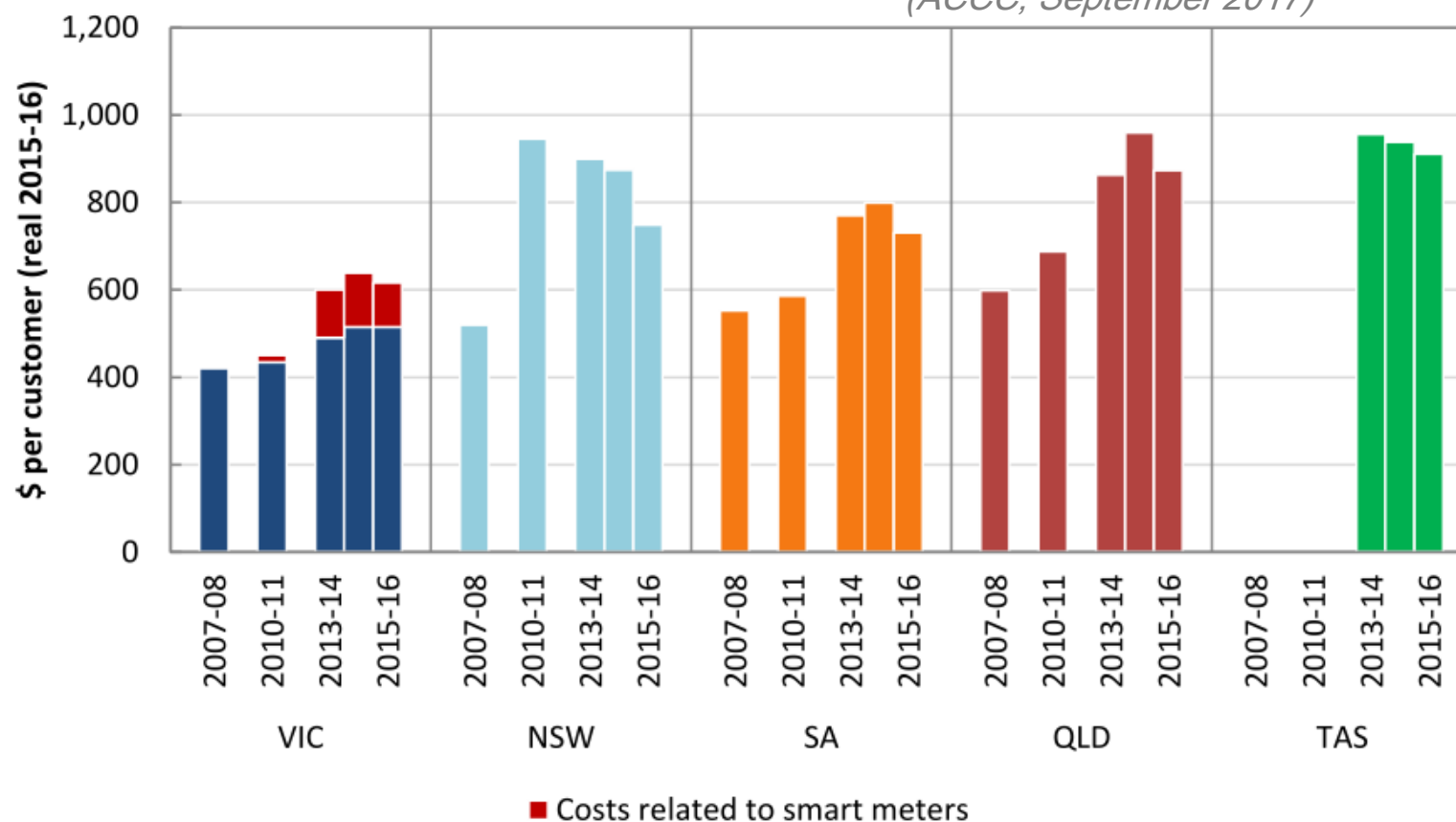
# Key success indicators

- The tool is available and there has been strong participation in engagement activities, resulting in the tool being used by consumer advocates in submissions, articles and other engagement with DNSPs, retailers and regulators, resulting in an increase in the quality of submissions and better informed discussion about tariff design and regulation.
- Advocacy and dialogue is more robust and effective, ideally leading to improved tariffs, regulatory changes and other possible interventions to protect consumers, ensure efficient investment and uptake of new technologies in the long-term interests of consumers.

# Where next?

**Figure 2.35: Average network costs per customer, by state, real values in 2015–16 dollars**

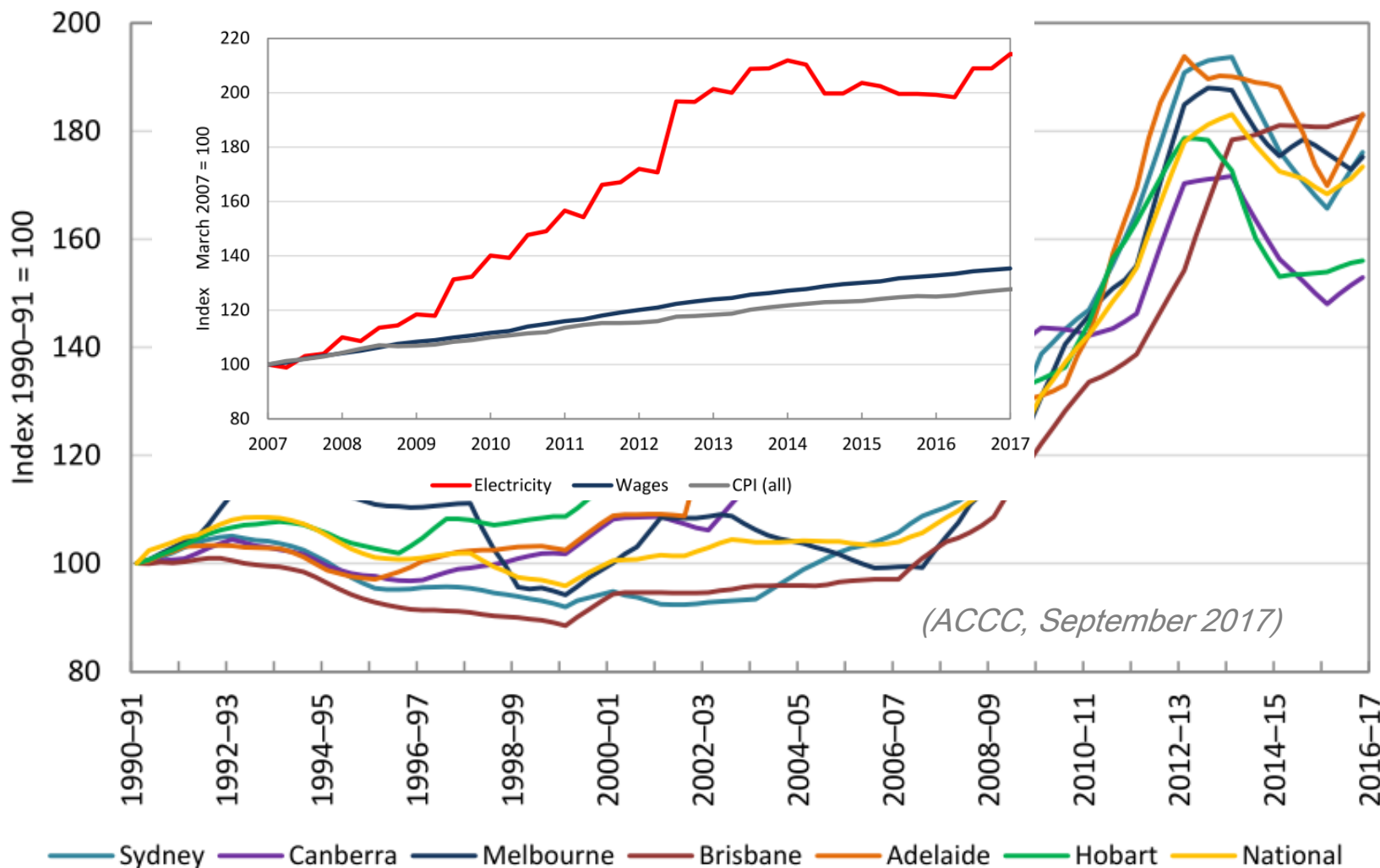
*(ACCC, September 2017)*



# Does this look like retail success?

Figure 1.2: Retail price index (inflation adjusted) – Australian capital cities

Figure 1.3: CPI for electricity compared with other sectors and wage growth





... or this?

Figure 1.9: Comparison of residential electricity prices (before and after tax) (Australian cents per kWh) (May 2017 prices in Australia, 2015 prices in European countries)<sup>62</sup>

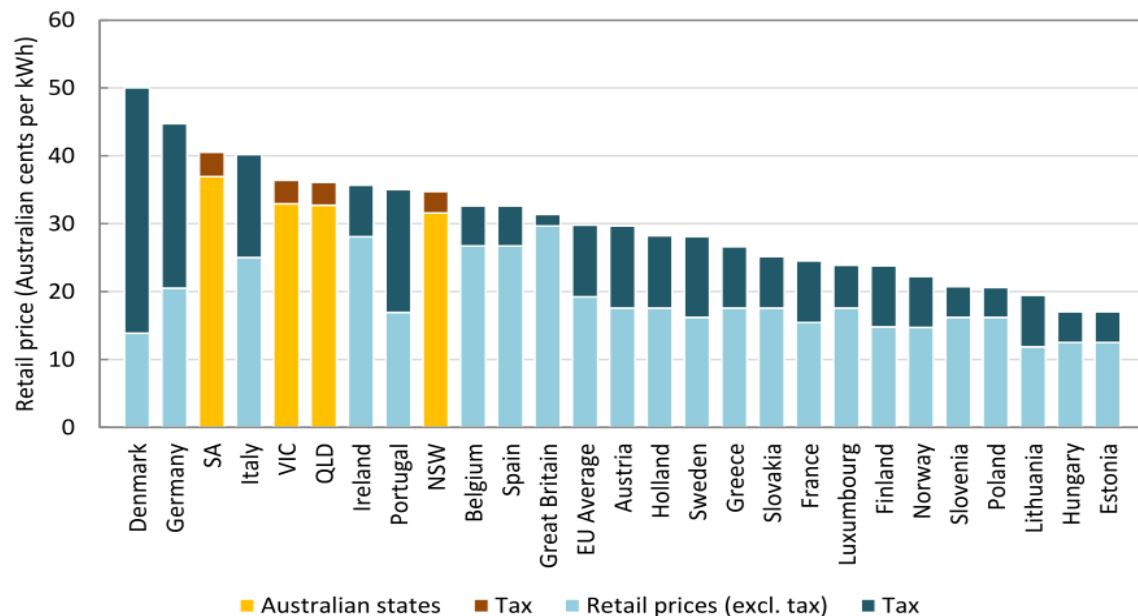
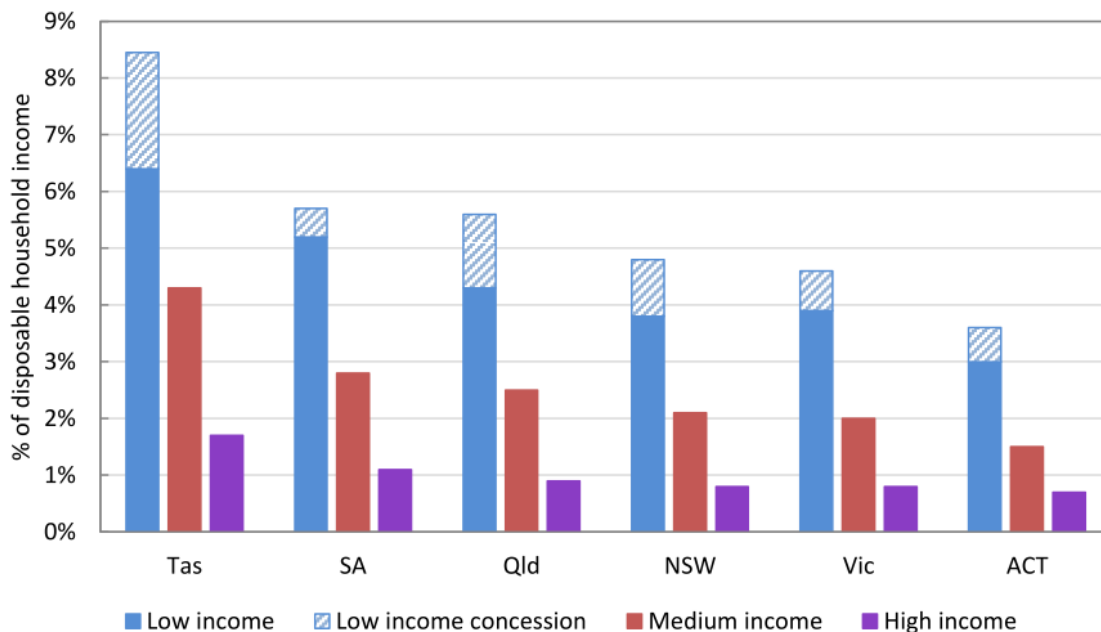


Figure 1.4: Median market offer as a proportion of household income in 2016



(ACCC, September 2017)

# Workshop program

- 10.45 Introduction to CRT issues and Tool, Iain MacGill, UNSW
- 11.00 Project outcomes and demonstration of the tool, Navid Haghdadi
- 11.30 Panel Presentations
  - Lynne Gallagher, Energy Consumers Australia
  - Dean Lombard, Alternative Technology Association
  - Scott Sandles, Australian Energy Regulator
- 12.15 Panel Q&A and General Discussion
  - feedback on tool functionality and priorities for possible further developments to assist stakeholders in contributing to tariff design
- 12.50 Conclusions - key themes and issues emerging from the workshop, and opportunities for future work
- 1.00 Workshop concludes